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BLACK RAIN.*

PERSEVERANCE is said to command success; if so, unless an early protest be raised, we may soon find a popular belief in frequent falls of volcanic matter in different parts of the British Isles. While we accept most of Mr. Rust's facts, we dispute *in toto* his deductions; but that our readers may fairly understand the case, Mr. Rust shall speak—first, by the reproduction of a paragraph recently quoted by the *Times* from the *Aberdeen Journal*; secondly, by extracts from the work above quoted. On both we will then briefly comment.

BLACK RAIN.—The black rain showers, which are now so well known in Scotland, and about which the inhabitants of a part of Aberdeenshire are in the way of speaking with no greater astonishment, when one of them falls from a peculiarly-coloured dark cloud, blackening materials exposed to it, than they speak of a white shower from a snowy cloud, have been at last recognized in England. Between the beginning of January, 1862, and the middle of January, 1866, there have been no fewer than eight authenticated black showers in Scotland. Seven of these fell in Slains and the extensive surrounding district. Two of them were accompanied with pumice stones, some of the balls of which measured 8 to 10 inches in diameter, and weighed upwards of a pound avoirdupois. The first four, including the Carluke shower, and the eighth, were contemporaneous with outbursts of Vesuvius, and the intermediate three with those of Etna. But now through the instrumentality of the Rev. Mr. Rust, of Slains, who was the first to draw general attention to the Scottish showers, it has been discovered that England gets her share likewise of black showers, although she did not think that she was so distinguished. On the 3rd of May of the present year (1866), at 11 a.m., and again at 4 p.m., the town of Birmingham and the surrounding country were for three-quarters of an hour each time enveloped with black clouds producing darkness and rain. Accidents took place in the streets, vehicles were upset, and gas had to be lighted at some of the crossings, and nearly in all places of business. Mr. Rust, writing for information, got inquiries instituted, and the result is found to be, that a large quantity of black rain, similar to the Scottish, fell, and blackened rain water in tanks and clothes on greens, not only in Birmingham itself, but at rural places many miles distant, unaffected by soot and smoke, and even windward of that town. So far as known, however, no word has yet arrived of any volcanic outburst, although, judging from what has taken place in Scotland, a probability exists that some volcano has been in a state of activity, emitting its contents, whether it be heard of or not.

The following are extracts from Mr. Rust's work. Speaking of the first shower, he says :—

"The rain blackened, as if with sooty drops, all the white or light coloured clothes exposed to it on the bleaching or drying greens, so that they required to be re-washed; and cold water and soap were not sufficient to eradicate the stains, therefore hot had to be applied, and some of the clothes required to be boiled be-

* *The Scottish Black Rain Showers, and Pumice Stone Shoals of the years* 1862 *and* 1863. By the REV. JAMES RUST, A.M. W. Blackwood and Sons.

fore they regained their former colour; but by such hot applications, the spots were completely eradicated."

We may here remark, that one of the shirts, probably one of the most strongly marked, was sent up to Admiral FitzRoy, who wrote that he "could not discover the *least trace of discoloration* left on the shirt (which was somewhat *damp* when left at the Meteorological Department and opened)." And again, "The shirt does not show any *definite* markings, except in one place, not to be safely identified as a discoloration by *rained* water." Resuming Mr. Rust's narrative:—

"The rain-water collected by spouts from the roofs of houses, and conveyed into casks, was completely darkened, and filled with black particles for a time held in suspension. It was also hardened, so that, unlike all ordinary rain water, it did not froth or make a lather with soap, but curdled the soap, as water impregnated with carbonic acid gas, or hardened by carbon or soot does. It likewise gave out a nasty, disagreeable, stinking smell, so as to be quite unsuitable for domestic purposes. This must have been partly caused by sulphur, combined, perhaps free, but undoubtedly in the form of sulphuric acid gas. . . . . Immediately after this occurrence of the black rain, it was found that the sea had floated to land, and stranded all along that part of the coast of ten miles extent, which had been covered by the cloud, and no other part, a vast collection of pumice stones. They lay like a shoal of stranded fish. They could have been gathered along the shore by waggon loads the thousand yards, and there were pieces weighing half a pound avoirdupois. Such an occurrence had never been heard of before as having happened on the coast of Slains."

The chapter entitled "The result arrived at," is far too long (17 pp.) for verbatim reproduction, but it may be epitomized in a very few lines. Our author, who has referred to soot, smoke, chimneys, and carbon, on every fourth or fifth page of his narrative, rejects it directly he comes to theorize on the cause of the blackness of the water, and unhesitatingly affirms that it came from Vesuvius. He does not say why the pumice stones and fine impalpable powder travelled some 1500 miles at the same rate, which must have been the case if both arrived together; he does not say why the parish of Slains is so uniformly honoured with these showers, that "seven black showers" have fallen there, and only one in any other part of Scotland; he does not explain why the showers are seldom noticed further inland than Slains, nor why their breadth is so slight as 10 or 20 miles; but he calls upon us to believe that "Vesuvius emitted the pumice stones, and the black, sulphureous, carbonaceous, acidiferous substances contained in the showers;" that the light powdery dust and pumice stone blocks, half a pound in weight, travelled along at equal speed, and in close companionship, far above the snowy summit of Mont Blanc (or it would be blackened), and on, still on, for hundreds of miles, with not a variation of half a degree in their course, until they reach their destined resting-place on the Aberdeenshire coast, when *all* the pumice stones are dropped into the sea, and black rain on the selected village of Slains.

It is almost impossible calmly to review such a theory, and yet it is equally objectionable to allow it to pass unchallenged, especially looking at the ready circulation always accorded to the marvellous; perhaps divesting it of circumlocution, and stating it plainly as above,

it is almost sufficiently self-condemning. Who can believe in the transport to the same distance, and with equal velocity, of light, sooty matter, and blocks of pumice stone weighing half a pound (by the bye, they are said to weigh a pound in the newspaper extract; why is their weight doubled?). Who can believe that the wind on seven out of eight occasions blew in a perfectly uniform line, not varying 5 miles to the right or left, in a course between one and two thousand miles long? We will briefly remark, that residents in the neighbourhood do not concur in Mr. Rust's report of waggon loads of pumice, or in his theory of its origin; and that a specimen was submitted to Professor Hofman, who reported—

"Chemical analysis has proved the mysterious material you forwarded to me to be essentially a silicate of lime containing in addition, oxide of iron, alumina, magnesia, sulphuric acid, hydro-chloric acid, and phosphoric acid; of the latter only traces. These are exactly the constituents which are met with in the products of volcanic eruptions, but they are also the constituents of the slags which are found in every smelting furnace of our ironworks. Chemical analysis then is unable to decide the origin of the material in question. Had the specimen which you transmitted to me been placed in my hands without further remark, and had I been asked to state what I thought the substance was, I would have said *the frothy slag of an iron work.*

We have only to add, that such slags are quite common at Aberdeen (20 miles off), where there are at least four large iron foundries, two of them at the mouth of the Dee. Is it not more likely that the material travelled some 25 miles from Deeside, on the surface of the water, than that it floated gossamer-like in the air for sixty times that distance? But what of the black rain? We believe the origin is equally simple, and that it really arises from the chimneys, to which every one seems to have attributed it until Mr. Rust suggested the more marvellous origin. We do not presume to say whether it was smoke from Aberdeen, from passing steamers, or from the fish-curing village of Colliston; but we could hardly have stronger evidence that smoke is at the bottom of the whole matter than is afforded by the two other localities where "black rain" has been observed—viz., Carluke, amid the iron foundries of Lanarkshire, and Birmingham, where we were jokingly offered any quantity of "black rain" a year or two since, and where now Mr. Rust has discovered it.

Having inquired of one of the rainfall observers at Birmingham, we have been favoured with a reply from which the following is an extract—"I imagine that none but country people who wash in crystal, and the wonder-seekers who have a theory to support, would discover the rain of that day to be much blacker than usual."

We are by no means prepared to deny that rain *may* bring down volcanic dust and be thereby darkened, but if it does we shall surely hear of it not from one parish, or even one county, but from observers in all parts of the kingdom; therefore, as well as for the reasons already given, we take leave of Mr. Rust, begging him for his own sake and for the credit of the nineteenth century, rigorously to sift the facts ere he again announces a fall of black rain.

RAINFALL IN MAY, 1866.

Div.		STATIONS. [The Roman numerals denote the division of the Annual Tables to which each station belongs.]	Height of Gauge. Above Ground		Above Sea Level.	Depth of Rain. Total Fall.	Difference from average 1860–5	Greatest Fall in 24 hours. Depth.	Date.	Days on which ·01 or more fell.
			ft.	in.	feet.	inches.	inches.	inches.		
I.	ENGLAND.	Camden Town	0	6	100	2·03	— ·37	·63	31	10
II.		Staplehurst (Linton Park)	0	6	200 ?	·81	—1·43	·24	11	8
,,		Selborne (The Wakes)	4	0	500 ?	1·56	— ·93	·34	10	9
III.		Hitchen	2	0	240	1·04	— ·89	·25	11	9
,,		Banbury	7	0	345	2·17	— ·05	1·18	31	10
,,		Wisbech	0	6	10	1·74	...	·45	10	9
IV.		Bury St. Edmunds (Culford)	1	2	...	1·66	— ·50	·32	2	11
V.		Calne	0	11	250	1·15	...	·45	10	9
,,		Plymouth (Goodamoor)	0	2	580	3·16	— ·10	·63	31	12
,,		Barnstaple	0	6	31	1·05	—1·39	·44	11	8
,,		Taunton (Fulland's School)	1	4	...	1·64	— ·41	·83	27	11
VI.		Shrewsbury (Highfield)	5	6	200	1·56	—1·03	1·07	31	8
,,		Tenbury (Orleton)	0	9	200	·94	—1·94	·23	11	11
VII.		Leicester (Wigston)	0	6	220	1·10	...	·34	11	9
,,		West Retford	0	6	50	1·07	—1·23	·27	10	9
,,		Derby	5	0	180	1·75	— ·41	·58	31	11
VIII.		Manchester	2	7	106	1·54	—1·12	·76	11	9
IX.		York	0	6	50	·58	—1·37	·39	11	6
,,		Skipton (Arncliffe)	3	0	750	1·92	—1·43	·80	10	6
X.		North Shields	1	0	124	1·14	—1·50	·66	10	8
,,		Borrowdale (Seathwaite)	1	0	422	5·06	—4·48	2·24	9	8
XI.	WALES.	Abercarn	1	3	450	1·06	...	·40	11	12
,,		Haverfordwest	2	0	60	1·36	—1·36	·46	11	11
,,		Rhayader (Cefnfaes)	2	0	880	1·18	—1·67	·48	11	7
,,		Llanberis (R. Victoria Hotel)	1	0	370	3·68	...	·98	11	9
XII.	SCOTLAND.	Dumfries	0	5	70	1·41	— ·97	·54	10	11
,,		Hawick (Silverbut Hall)	4	0	512	1·40	...	·54	10	8
XIV.		Ayr (Auchendrane House)	2	3	94	1·94	—2·17	·88	10	11
XV.		Otter House	0	6	130	1·66	—2·08	·75	11	9
XVI.		Leven (Nookton)	0	6	80	1·50	— ·50	·56	10	9
,,		Stirling (Deanston)	0	0	130	1·11	— ·54	·50	10	9
,,		Logierait	1	0	250	·80	...	·30	11	5
XVII.		Ballater	0	10	656	2·30	...	1·10	11	14
,,		Aberdeen	4	8	115	1·72	...	·31	28	15
XVIII		Inverness (Culloden)	3	0	104	1·34	...	·30	12	9
,,		Fort William	0	8	20	2·06	...	·38	7	13
,,		Portree	0	4	60	1·95	—3·70	·50	8	13
,,		Loch Broom	0	8	48	2·16	...	·50	9	12
XIX.		Helmsdale	1	0	34	1·57	...	·27	2&11	16
,,		Sandwick	2	0	78	2·15	— ·11	·67	9	12
XX.	IRELAND.	Cork	6	0	65	2·11	...	·96	30	12
,,		Waterford	4	0	60	1·28	— ·97	·26	13	12
,,		Killaloe	5	0	128	3·06	— ·12	·88	13	15
XXI.		Portarlington	9	0	236	1·19	—2·00	·52	13	16
,,		Monkstown	0	6	100	1·58	— ·33	·72	31	10
XXII.		Galway	6	0	25	1·97	...	·39	8	17
,,		Bunninadden (Doo Castle)	1	0	...	1·71	...	·42	13	14
XXIII		Bawnboy (Owendoon)	1	3	218 ?	1·93	...	·63	11	12
,,		Waringstown	0	4	191	1·27	...	·42	11	9
,,		Strabane (Leckpatrick)	0	5	260	1·44	...	·37	10	15

+ Shows that the fall was above the average; — that it was below it.

METEOROLOGICAL NOTES ON THE MONTH.

ABBREVIATIONS.—Bar. for Barometer; Ther. for Thermometer; Max. for Maximum; Min. for Minimum; T for Thunder; L for Lightning; and T S for Thunderstorm.]

ENGLAND.

CAMDEN TOWN.—Gale at 6 p.m. and hail at 7 p.m. on 11th. Strawberry in blossom on 21st No rain from 12th to 26th; hail and heavy rain on 31st.

LINTON PARK.—A cold ungenial month, dry withering winds from E. and N.E., with scarce a particle of dew. Five frosty mornings, and two others nearly so, while in April we had only two frosts, and the average night temperature of that month was as near as possible that of May, being 39°·15 against 39°·81; the hottest day in April was 5° above any day in May. Hardy fruits may recover, but the hay crop must be short; hardy vegetation 4 or 5 days behind the usual time, delicate things still more so. T heard on five occasions.

SELBORNE.—Hail with T on 2nd; T with rain on 26th; boisterous evening with aurora on 11th. Max. 66° on 28th; min. 28° on 4th and 16th. Frost from 2nd to 5th, and 16th to 19th inclusive.

BANBURY.—T on 3rd, and, with one flash of L and heavy rain, on 31st. No rain from 12th to 31st; sharp night frosts to the end of month. Potatoes, Gooseberries, and wall fruit much injured. Max. 69°·5 on 19th. Min. 24°·5 on 4th.

WISBECH.—T on 4th & 27th. Solar halos on 8th & 30th. Oak in leaf on 15th, lilac in bloom on 9th, laburnam on 12th, honeysuckle on 21st, mountain ash on 22nd.

CULFORD.—T on 3rd, 4th, 12th, & 27th. Grass crisp with frost on 29th. Max. 75° on 23rd. Min. 28° on 3rd. Latter part of the month dry with cold east winds, fine gentle rain on 31st, which was much needed.

CALNE.—T S on 12th and 26th. L on 13th. Nights cold, 7 being frosty.

GOODAMOOR.—Much snow fell on the 3rd, on Dartmoor. Frost on 13 mornings. Max. 70°, Min. 22° on 4th. Wind easterly from 14th to 31st, at times blowing a perfect gale; 24th & 25th were very stormy, coming on at night.

TAUNTON.—Ice $\frac{1}{8}$-of-an-inch thick on 19th, with piercing east winds.

ORLETON.—Snow on the hills on the 2nd. Severe frost till 6th, and on the 30th, injuring potatoes, beans, and the shoots of ash and oak. T on 3rd, 4th, 27th, & 31st. No rain from 13th to 31st, the air being dry and sky cloudless; on 31st a little rain before sunrise, it then got cloudy with a strong cold east wind till 1.30 p.m., rain then commenced, increasing till 2 p.m., when for nearly an hour an immense fall of rain took place in gusts from 2 to 5 minutes; at 3 p.m. more than 1 in. had fallen, it continued all the evening till 9 a.m.; on the 1st of June I registered 2·655 of rain, the greatest fall in 24 hours since 1852. As I have always entered the rain to the day on which it was measured, this will come into June; two or three peals of T were heard on the 31st before the rain set in, but the heavy rain did not extend more than a few miles in any direction.

WEST RETFORD.—This has been a most ungenial month; cold, drying, easterly winds, and a lack of dew or rain, added to a low temperature, have kept back all vegetation. Frost on 8 nights; max. 76° on 19th; min. 28° on 4th. The rainfall for the first 5 months of this year is ·97 below the average of last 7 years.

DERBY.—Cold, ungenial month, vegetation making little progress, and the frosty nights seriously injuring potatoes and kidney beans, while gooseberries, currants, and small fruit have disappeared.

MANCHESTER.—T on 11th. Excessively dry and cold, with E. winds.

ARNCLIFFE.—An unusually dry month, with cold wind, mainly from the east.

N. SHIELDS.—Cherry in blossom on 18th, apple on 25th, strawberry on 27th.

SEATHWAITE.—Prevailing wind E., with extreme dryness; at 3 p.m. on 20th, at Tarn Bank, dry bulb, 72°·8, wet bulb, 57°·2, difference 15°·6.

WALES.

ABERCARN.—A very dry month; prevalence of N. and E. winds, but it has been generally calm.

HAVERFORDWEST.—The coldest May since 1855; prevailing wind E., doing much injury to vegetation, and causing sickness and mortality; from 11th to 13th a strong gale from E.

CEFNFAES.—The coldest May for many years; sunny days, but frosty nights retarding vegetation; water scarce, no rain from 13th to 31st. Max. 69°; min. 24°.

SCOTLAND.

DUMFRIES.—First part of month wintry, with frost and snow; on the 2nd the whole country white with snow, which however soon melted. 8th to 11th showery, thence to the end of the month dry with low night temperature. The pastures much injured by the drought; on morning of 30th, potatoes blackened by frost; on 31st a slight fall of snow; hay crop likely to be light; dahlias nipped on 15th, hawthorn in blossom on 22nd.

SILVERBUT HALL, HAWICK.—First half of the month cold and frosty, with hail, snow, and sleety showers; latter half generally fine, except the last four days, which were very cold with "hask" winds. Farmers are loud in their complaints about the scarcity of fodder; hay almost used up, and the pastures bare.

AUCHENDRANE.—The cold of the beginning of May, so generally noticed, was felt here also; ther. on 4 nights at or under 32° in the first week. 1·76 in. (of the total 1·94 in.) of the rain fell in the first 12 days.

OTTER HOUSE.—No rain from 12th to end of the month; the continued drought stints the hay crop, for "May makes the hay;" the other crops look well. On the 29th, a hail shower, and snow on the distant hills, which soon melted.

FORT WILLIAM.—For half the month there was a bright sun and soft airs from S.W. On Ben Nevis and many neighbouring hills a good deal of snow still remains, contrasting strongly with the summer aspect of things at a lower altitude. Fresh snow on the hills on 28th.

NOOKTON.—Very cold for the month; min. 32°·4 on 16th; from 19th to 26th clear, with east winds.

DEANSTON.—Max. 73°·3 on 23rd; min. 26° on 15th. Month very dry, with E. winds; end of month very cold and some hail-storms. Plum and peach blossoms much damaged, and little prospect of a moderate crop.

LOGIERAIT.—With very hot days, severe frosts at night, and a rainfall of only ·80, vegetation is necessarily backward and pastures suffering, but the cereals are as yet uninjured, and the fruit blossoms unusually luxuriant.

BALLATER.—The weather in the early part of the month very unsettled, the hills having a fresh coating of snow on several mornings. Fine from 13th to 26th; thunder on 10th, on which day the cuckoo was first heard. Max. 69° on 19th and 20th; min. 25° on 1st. Influenza very prevalent in the early part of month.

ABERDEEN.—Max. 64° on 23rd; min. 29°·3 on 1st; from 13th to 27th only one shower, but there were copious dews.

CULLODEN.—No rain from 14th to 29th; very hot on 25th; sharp frost on 1st; snow on 2nd; frequent hail-showers on 3rd; middle of month dry and sunshiny; heavy hail showers on 29th.

PORTREE.—Cold and squally, with showers of snow and rain to the 12th; then to 27th dry and hot, with cold nights; thence to end of month very cold, with hail showers; 31st warm. Frost on 14 nights. Max. 75° on 20th. The crops look better than might have been expected, the soil being soaked with rain of previous months, the hot sun brought vegetation forward in spite of the frosts. Cattle still healthy; no disease.

LOCHBROOM.—Cold, dry, and wet alternately, from 1st to 12th; then dry with hot sun till 20th, when the heat became intense; after 27th it changed again to cold, hail, sleet, and snow.

SANDWICK.—Ground white with snow on morning of 2nd; sun pillar in afternoon. Month cold and wet; the usual cold days from 10th to 15th; sleet showers so late as 27th and 29th. Prevailing winds, N. and E.

IRELAND.

KILLALOE.—Snow on first three days, and the whole month remarkable for the continuance of cold and parching winds.

MONKSTOWN.—Cold till 5th, then to 13th warmer, no rain from 13th to 31st, during which time cool (and at times harsh) winds from E., N.E., & S.E., prevailed; about 10 p.m. on 30th rain commenced and continued almost without intermission till noon 1st of June. Apples and strawberries likely to be a heavier crop than has been known for years, and all fruit seems promising.

DOO CASTLE.—Beginning of month cold, with frost, snow, and hail. No rain of any account from 13th to 31st, the prevalence of E. winds during this period tended to dry up the earth, and vegetation was thereby not only retarded, but to a certain extent blighted. Both man and beast felt the effect of this long-continued drought.

OWENDOON.—Cold at commencement, crops and grass much injured by the cold winds and want of rain. Potatoes injured by frost on 29th.

WARINGSTOWN.—Month on the whole dry, cold, and ungenial. Crops suffering from want of rain and cold nights; that they have not been worse is probably due to the large amount of sunshine raising the heat of the ground several degrees above that of last May. Evaporation 2·73.

LECKPATRICK.—Month set in cold, latter half excessively dry, with cold winds from E. Dry bulb on 23rd at 3 p.m. 68°, wet bulb 55°; max. 80° on 20th. much sickness, chiefly feverish colds, influenza, &c.

WANTED — A SIMPLE RULE FOR MENTALLY DETERMINING DIFFERENCES OF HEIGHT BY THE BAROMETER.

To the Editor of the Meteorological Magazine.

SIR,—I do not intend to put my name to this, so of course am free to indulge in a little autobiography, as a partial explanation, partial justification, of the request I have to make. Time was when I should have scorned to pen it, and been strongly inclined to chaff you for inserting it; but college days are long gone by; hunting, shooting, and fishing, have obliterated the lessons of Alma Mater, and I fully concur in Mr. Gladstone's opinion of the arithmetical powers of M.P.'s, if I may judge by my own.

Now, Sir, the country round my place is very hilly, and we often have discussions as to the absolute and relative height of different hills. As I (unluckily) am the only one just hereabouts who has a conveniently portable aneriod, I am expected to settle these discussions. I have not the least objection to taking the readings, but I do greatly object to the bother of working out the corresponding altitudes. Our highest hills are under 1500 feet, most of them under 1000, surely some simple rules can be given to find the difference represented, say by 30·07 at the lower station, and 29·48 at the higher station, on a hot day in summer—without a lot of corrections for temperature at both upper and lower stations, corrections for reading at sea level, &c. Admiral FitzRoy used to say something about each tenth of an inch equalling 100 feet, *that* is not accurate enough. Somebody (I forget who) gives each foot equal to ·0011 inch. Cannot some of your readers give us a few *simple* rules, (mind I protest against rule of three and logarithms) for deducing heights correct say to within 30 or 40 feet. If with simplicity they can couple greater accuracy, so much the better, but simplicity is the principal thing, and whosoever therewith combines the greatest accuracy, will most oblige,

Yours very truly,

June 5th, 1866. A LAZY MAN.

PERIODS OF DROUGHT AT CARDINGTON.

It may be interesting to some of the readers of this Journal to know the periods of dry weather of fourteen days and upwards since 1845, in one of the midland counties, where the monthly fall of rain is under 2 inches. I will also state the number of days in each year on which no rain fell, dates included.

		DAYS.			DAYS.
1846.	June 9th to June 22nd	14	1856.	Sept. 8th to Sept. 21st	14
,,	Sept. 7th to Sept. 22nd	16	1857.	Angust 17th to Sept. 1st. ...	16
1847.	March 8th to March 22nd ...	15	,,	Dec. 23rd to Jan. 7th, 1858	16
,,	Sept. 23rd to October 6th ...	14	1858.	March 18th to March 31st...	14
1848.	April 30th to May 18th	19	,,	June 19th to July 4th.....	16
1849.	July 4th to July 17th.....	14	,,	Nov. 10th to Nov. 25th.....	16
1850.	Feb. 17th to March 3rd	15	1859.	June 5th to June 19th	15
,,	March 5th to March 22nd ...	18	,,	July 5th to July 18th	14
,,	Sept. 5th to Sept. 19th	15	,,	Nov. 10th to Nov. 26th.....	17
1851.	June 17th to July 1st.....	15	1860.	October 27th to Nov. 10th...	15
,,	Sept. 6th to Sept. 23rd	18	1862.	July 21st to August 6th.....	17
1852.	March 3rd to March 29th ...	27	1863.	Feb. 5th to February 18th...	14
,,	April 1st to April 17th	17	,,	March 21st to April 4th.....	15
,,	June 30th to July 13th	14	,,	July 4th to July 18th.....	15
1853.	May 15th to May 28th	14	1864.	April 18th to May 1st.....	14
,,	July 30th to August 16th ...	18	,,	Sept. 24th to October 19th...	26
1854.	Feb. 24th to March 10th ...	15	1865.	April 20th to May 4th	15
,,	March 28th to April 20th ...	24	,,	June 4th to June 29th	26
,,	August 25th to Sept. 12th...	19	,,	August 30th to Sept. 20th...	22
1855.	April 13th to May 3rd	21	,,	Sept. 22nd to October 8th ...	17
1856.	Feb. 21st to March 16th ...	25			

Only seven times during twenty years have the number of dry days exceeded twenty at one time, and two of these times were in 1865.

The following shows the number of days in each year on which no rain fell, from 1846 to 1865, inclusive:—

Year.	Days.	Year.	Days.	Year.	Days.	Year.	Days.	Year.	Days.
1846 ...	201	1850 ...	223	1854 ...	230	1858 ...	240	1862 ..	184
1847 ...	230	1851 ...	217	1855 ...	225	1859 ...	219	1863 ..	234
1848 ...	169	1852 ...	204	1856 ...	214	1860 ...	169	1864 ...	250
1849 ...	193	1853 ...	194	1857 ...	220	1861 ...	204	1865 ...	232

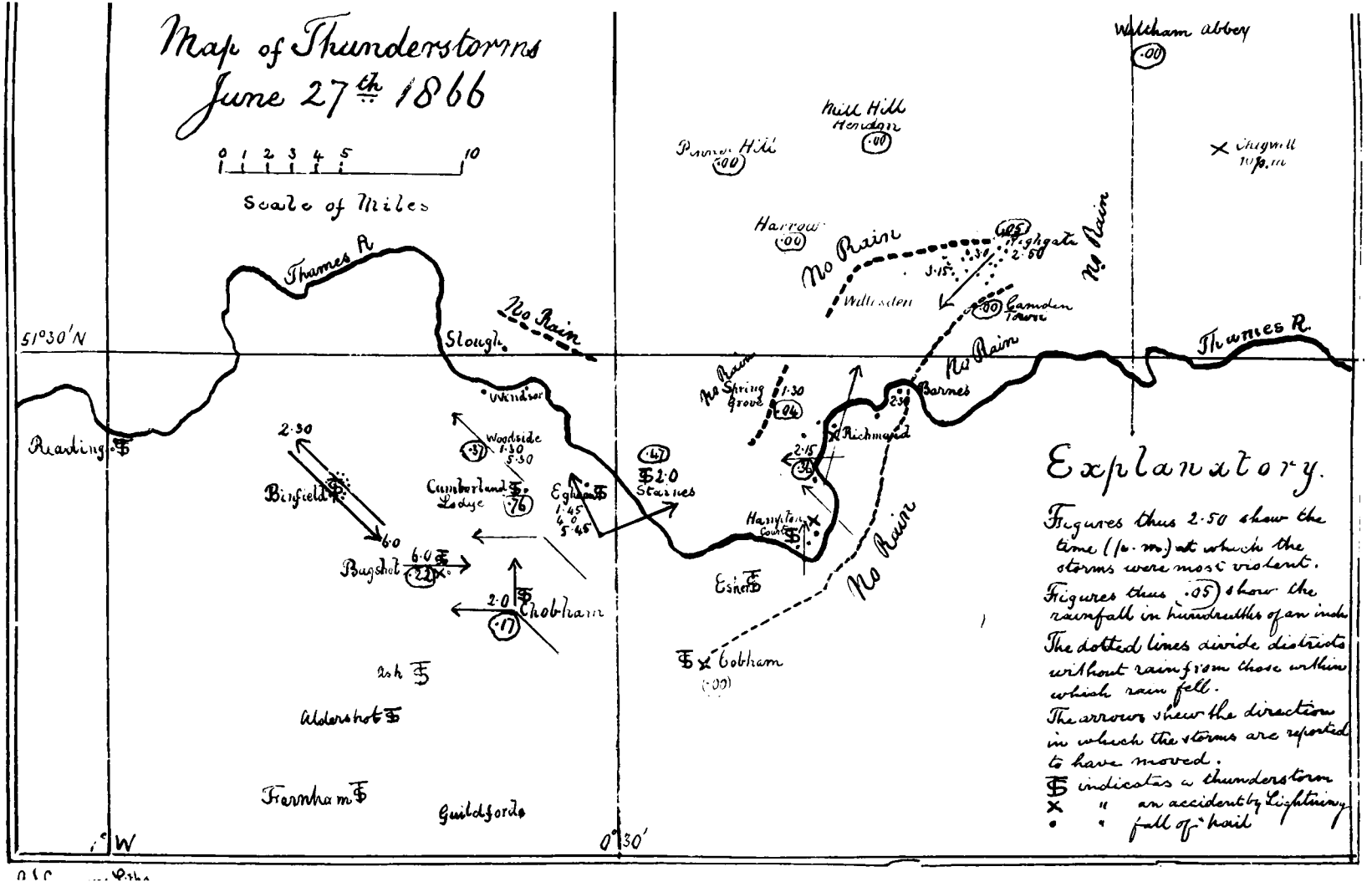
From these figures it will be seen that it was in 1864 that there were the greatest number of days on which no rain fell; also in that year the least fall of rain took place, being 5·564 inches below the average of twenty years.

Cardington is situated about three miles from Bedford, one mile from the river Ouse, 12 feet above the level of the river, and 100 feet above the sea level. The weather is generally very dry in summer, and very damp in winter.—JOHN MCLAREN, *Gardener to S. C. Whitbread, Esq.* [*From the Journal of Horticulture.*]

LATEST INTELLIGENCE.

THUNDERSTORM AT HEREFORD, June 1st, 1866.—A thunderstorm occurred here at 5.35 p.m. from N.E.; about 6.3 p.m. the wind suddenly veered to S.E., and produced some very heavy rain for a few minutes; the lightning was very vivid at this part of the storm, and was followed almost instantly by a crashing peal of thunder. The storm abated at 6.40 p.m.; the amount of rain collected during this time was ·40 in. Barometer 29·51. The air close and oppressive on morning of 2nd.—WM. COOKE.

STORMS IN THE ISLE OF THANET.—Sunday evening, June 3rd, was oppressively close at Margate; soon after midnight, lightning became frequent with thunder; the storm increased until about 4 a.m., when it was excessively violent, with heavy rain. The morning was showery, and while walking from Sandwich to Shepherd's Well Station, 6 miles N.W. of Dover, occasional distant thunder was heard but only a few drops of rain fell. On reaching Dover I found that it had been visited with a very heavy storm and over an inch of rain. The first storm was most severe over Ramsgate and Margate about 4 a.m.; the second over Hythe, Folkestone, and Dover, in the afternoon. At Hastings the rain was under half an inch.—G. J. SYMONS.


Map of Thunderstorms
June 27th 1866
0 1 2 3 4 5 10
Scale of Miles
Thames R.
51°30'N
Reading
Slough
Windsor
Woodside
1.30
5.30
Cumberland Lodge
Eghams
1.45
4.0
5.45
Staines
Bagshot
Chobham
Ash
Aldershot
Farnham
Guildford
0°30'
Mill Hill
Hendon
Harrow
Willesden
Highgate
Camden Town
Willesden abbey
Chigwell
10 p.m.
Hampstead
Spring Grove
Richmond
Barnes
Thames R.
Hampton Court
Esher
Cobham
No Rain
Explanatory.
Figures thus 2.50 show the time (p. m.) at which the storms were most violent.
Figures thus .05 show the rainfall in hundredths of an inch.
The dotted lines divide districts without rain from those within which rain fell.
The arrows shew the directions in which the storms are reported to have moved.
indicates a thunderstorm
" an accident by Lightning
" fall of hail